

ABSTRACT

Title: PNF technique after arthroscopic stabilization of the shoulder joint

Objectives: The objective of this work is to consider the possibility of use of the proprioceptive neuromuscular facilitation technique (PNF) in early stages of rehabilitation after arthroscopic stabilization of the shoulder joint. The idea is to use the phenomenon of irradiation with which this concept works.

Methods: The pilot experimental group consisted of 7 healthy participants with simulated arthroscopic stabilization of the left shoulder joint. The electromyography was used to record the electric activity of musculus trapezius pars descendens, pars transversa et pars ascendens, musculus deltoideus pars acromialis, musculus infraspinatus and musculus pectoralis major pars sternocostalis on the immobilized left arm; while using the PNF technique on the peripheral parts of the immobilised arm; and on the contra lateral arm. A 5s sequence of stabilised isometric contraction was analysed and all data further normalised to Maximal Voluntary Contraction (MVC). Considering the literature the 20% increase above the MVC was defined as substantial to assure sufficient functional capacity of the muscle fibres and therefore sufficient to stop muscle atrophy during immobilisation of the arm.

Results: Results of this study support initial suggestion about irradiation. With the exception of m. trapezius pars transversa, the measured electric activity of the muscles was higher while using PNF on the immobilised arm.

Conclusion: Irradiation could become an important and very effective part of therapy in early stages of rehabilitation after arthroscopic stabilization of the shoulder joint. However further studies including larger numbers of participants as well as actual patients should follow this pilot study to confirm all results.

Keywords: PNF, electromyography, arthroscopic stabilization of the shoulder, irradiation